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CHANGE IN SUSTAINING MEMBERSHIP CHAIRMANSHIP

F. J. Hanlon

Due to the illness of Mr. H. H. Williams, he has been relieved of the chairmanship of the Sustaining Membership Committee, and Mr. O. E. Servis, Past President, will be the Chairman. All correspondence for said Committee should be directed to him. We regret very much that Mr. Williams has been ill with sciatic rheumatism since October, losing about forty pounds, making a long rest of his nerves necessary.

We also regret to mention that another Past President, Walter Fraine, has been laid up for the past ten weeks with pneumonia and will have to go South for balance of winter.

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PRESIDENT'S MESSAGE—FIDELITY TO IDEALS

Frank J. Hanlon, Supreme President, A. E. S.

Every man carries deep within his heart an Ideal of the man he would be. It may be said to our credit that those ideals are generally altogether admirable and praisworthy, but how many of us really strive to attain them? To express it differently and more pointedly, how many of us are faithful to our Ideals?

Each one of us, perhaps, in the mental picture of himself as he would like to be, sees a man who enjoys and desires the respect and esteem and confidence of his entire community, and yet a day scarcely passes in which we do not do some act, commit some indescretion, indulge in some excess, neglect some opportunity for SERVICE that inevitably tends to lessen that respect and forfeit that esteem and abuse that confidence.

Each one of us doubtless treasures in his HEART the IDEAL of himself as an unselfish member of this SOCIETY, looked up to and held in affection born of assurance of his worthiness of it, and yet we are daily guilty of thoughtlessness, lack of consideration, selfish demands, careless words or ill temper that are of necessity reflected in the attitude of the FAMILY CIRCLES of our branches.

Each one of us carries in his own mind an IDEAL of personal conduct, of mental honesty of proper response to our moral obligation to our SOCIETY, and yet all too frequently we do the things we can neither approve nor justify: We assume an attitude toward persons, more especially our fellow members, which is POLITIC and SELF-SERVING rather than HONEST and SINCERE, and we neglect or definitely decline to undertake the deeds of service

which in our deepest consciousness we know we should endeavor to PERFORM.

All this may be explained by saying that a TRUE IDEAL involves perfection and no man can be perfect. That is true, try as we may, we will fall short of that, but the FACT does not excuse the LACK of HONEST EFFORT to at least approximate that IDEAL. The trouble is not so much in the FAILURE of our efforts as it is in the FAILURE to MAKE THEM.

The VALUE of an IDEAL does not lie in the mere contemplation, but in the FAITHFUL endeavor to attain it, and there is deep significance in the words of the OLD HYMN:

"And make us, this and every day
To live more nearly as we pray,"
That on JUNE 29, 30; JULY 1, 2, 1925,
We will not be lead astray,
But will be at the Convention up MONTREAL way.

METAL CLEANING

By John Acheson, Toronto

The cleaning of metals in its broadest sense is a problem that enters into practically every line of the metal industry in one form or another.

When we consider that every piece of manufactured metal must, during its process of manufacture, pass through some form of cleaning in order that the finished product may reach its final destination in a clean condition, we can form in our mind some idea of the various problems that have to be overcome, some of which may be simple, while others are quite complicated.

For me to attempt to cover the entire field of metal cleaning in a paper of this kind in an authoritative manner would be out of the question, and I doubt very much if the knowledge necessary to fulfill such an accomplishment lies within the power of any one individual.

To us of the electroplating fraternity there is speaking in a general way, but one problem, "the cleaning of metal for plating," a subject which in itself, covering the various platable metals and combinations of metals, various forms of grease, wax, oils and other forms of foreign coatings that

must be removed in order to permit a platable surface to the action of the electrolyte, presents a field for research and experiment that has been a problem in the industry since its inception, and will, no doubt, continue to be a source from which gray hairs and bald heads will be produced for some time to come.

In the early days of the industry the orthodox way of preparing metal for plating was to remove the grease in a hot potash solution, then brush with lime or pumice, using a cyanide or acid dip to remove oxidation. Strange though it may seem, the principles of cleaning today, speaking in a general way, are practically the same as existed when the industry was in its inception. Most of the metal coming to the hands of the plater is received from the polishing department more or less coated with a combination of grease and insoluble matter, usually in the form of emery, tripoli, or other abrasivies. The problem therefore is to completely remove this material from the surface with the application of the least amount of labor, and at the least possible cost. The fact that we have two different forms of material to remove brings then the most important problem of cleaning that the plater has to contend with.

The function of all alkali cleaners, such as is used by the platers, is to saponify or emulsify the grease or oil which is in combination with the abrasive material, this having been accomplished we find that the insoluble material is left still adhering to the article.

The alkali cleaner has no effect upon the insoluble material, therefore mechanical means must be resorted to in order to remove it. That is why it is necessary to resort to the use of the scratch brush. The application of the electric current to the cleaner is a form of chemical mechanical cleaning that goes a long way in the direction of mechanically removing insoluble material.

I believe that it is generally understood that in addition to the chemical action of the cleaner upon the oils and greases the mechanical action is the result of scouring or rubbing effect of the millions of bubbles of hydrogen gas, which striking against the insoluble particles, cause them to rescind and fall away from the articles. Electric clean-

ing, though, has its defects which tend to prevent its more general application, the most important of which is, perhaps, the fact that the passage of the electric current through the cleaner has in time the effect of producing an insoluble stain or tranish on the surface of the metal being treated.

This effect is especially noticable in the case of softer metals such as brass, copper, nickel, silver and soft soldered articles.

There is another method of chemical mechanical cleaning, that has received but little consideration in the plating industry but which might be adapted in many instances with advantage and in preference to the electric method. I refer to the use of agitation by the use of air or live steam blown through perforated pipe which causes a vigorous agitation of the cleaning solution and which in turn has the effect of flushing, or washing off the insoluble matter. The effectiveness of this method may be understood when we recall that if we take a piece of dirty metal and carefully hang it into the cleaner and as carefully remove it after a period of time, we will notice that the insoluble material still adheres. On the other hand, if we take the article and shake it vigorously in the cleaner the probabilities are that it will come out very much cleaner. It is obvious therefore, that the agitation of the cleaner, instead of the article is merely a reversal of the process, consequently the results obtained should be the same in either case. The use of the ball burnisher in place of polishing has had its effect almost entirely eliminating the problem of cleaning small articles where this method of preparing metal for plating is in use. As the articles come from the burnishers free from grease or oil, all that is usually necessary is to pass them through the cleaner to remove the slight soap film that may be present. This suggests the use of the tumbling barrel for cleaning. Unpolished articles may often be cleaned to advantage by tumbling them in an oblique or horizontal water tight barrel with some of the same cleaner that is used in the cleaning tank, after which they may be strung up or mechanically plated in the usual way.

In some cases even polished articles of steel or iron may be cleaned in this way.

Another method of cleaning that is applicable to steel stampings perhaps more than any other form is that of sawdust tumbling. Articles of this kind may come to the plating department covered with oil. A preliminary tumbling in the sawdust barrel will result in the entire absorption of the oil, leaving the articles in such a condition that a rinse in the cleaner will be sufficient to complete the operation. The copper cleaner received quite a bit of consideration a few years ago, but seems to have lost some of its popularity. This process for which rather extravagant claims were made, has its limitations but if applied where its application is practical has this effect of saving considerable time in the preparation of work for plating. The copper cleaner consists of any good cleaning solution to which is added a small proportion of copper solution with a free cyanide content, and may be operated with either steel or copper anodes.

The solution is operated as though it were a hot cyanide copper bath. The work is hung upon the cathode rod. The hot alkali dissolves the grease or oil assisted by the hydrogen gas generated which also drives off the insoluble matter, copper being plated out at the same time. Articles so treated may be further plated with any other metal if so desired. One objection to this method of cleaning is that the copper will plate over an oxidized or tarnished surface resulting in an unsound copper plate.

Any cleaner that will effectively remove grease or oil and other foreign matter, from any one kind of metal will under similar conditions remove the same kind of material from the surface of any other kind of metal, but not with the same effect on all metals. Herein lies another problem that confronts the plater. Different kinds of metals or combination of metals, must be treated in as many different ways to attain satisfactory results. For instance, while we could safely boil a piece ofsteel in a cleaner for an hour, a piece of lead antomony casket hardware would be ruined under the same conditions in a tenth of the time. Articles such as die castings, lead antimony mixtures, tin, and other soft metals should be in a comparatively clean condition before immersion in the alkali cleaner. The pre-

liminary cleaning may be accomplished by washing in a neutral soap solution, but even this solution will in some cases effect the polish. In such case it is necessary to resort to the use of gasoline or other material of a similar nature.

The manner in which articles are handled during the cleaning operation has also a great bearing upon the success or failure of the final result. This fact cannot be too strongly emphasized especially so in the case of the electric or agitated cleaners. We have seen operators take a bunch of work, strung on wires, hang the entire bunch all massed together on the cleaning rod and expect to get good results. If successful cleaning can be done in this way it is also possible to do successful plating under the same conditions, but I doubt if it is possible in either case. A safe rule to follow in the operation of the electric cleaner is to consider it as though it were a plating bath. Racks or hooks of ample current carrying capacity should be used wherever practical and the articles hung in such a way as will expose all portions to the action of the current. Overcrowding of the tank with work should also be avoided, better results are as a rule obtained by cleaning a comparatively few pieces at a time.

The general rule in connecting up electric cleaning tanks is to make the tank the anode side of the circuit. In such cases care should be taken to see that the work under process does not hang any closer to the ends or bottom of the tank than to the sides for the reason that if it should the current, taking the path of least resistance, would cause the end or bottom pieces to be much faster than those in the center. Uniform results are only obtained through uniform conditions. It should be noted that dealing with the subject of metal cleaning I have merely touched upon some of its phases, and in perhaps a rather elementary way at that.

There are a great many angles to this problem that have to be investigated in order to be understood.

The study of oils and greases of the various kinds as usually encountered by the plater, the action of various alkali cleaners and the different metals and combinations of metals provide our almost unexhaustible field for study and research.

HOLDERS FOR PLATING

James S. Cairus, Toronto Branch Electroplaters' Society of America

Before showing and demonstrating with my racks, I want to comment upon a few phrases or plating hints that are let fall by the members here, and it is quite possible that they are only picked up by a few. Perhaps the members who give out these hints forget they ever mentioned them. But they are a great benefit to every member of this society, and although we use these same methods and have done so for years, it helps to strengthen our confidence in them, it is gratifying sometimes to know of another member using your methods, it gives you a confidential feeling and it stands to reason those members who do not attend the meetings lose something that perhaps would be a great benefit to them. I recall one meeting night not long ago, Mr. Barrows was giving us a talk and he mentioned about keeping clean rinsing tanks and to have a plentiful supply of fresh water, and mentioning the fact that it took from 2 to 3 hours sometimes for a rinsing tank to neutralize after rinsing articles out of an acid dip. Now, who wouldn't know that, it seemed such a simple thing, but it was news to me. I always thought that the amount of water I had running into my rinsing tank was enough to keep it clear and neutral. It never struck me to try it with litmus. I can assure you that hint has benefited me greatly, and if it is only for that one little hint alone, I now take the opportunity and thank Mr. Barrows for it. I may also say, instead of interrupting our water pipe line, it was cheaper and more convenient to install an extra scouring and rinsing tank, which we did. Of course, this cost money, but the carbonate of nickel cost money, too. Now, on another occasion Mr. Coles was giving us a paper on the nickel plating zinc die castings. He illustrated how he changed the width or free space between the annode and cathode; also laying great stress on the cleaning solution being responsible for a successful nickel deposit, and about the last words Mr. Coles said before showing us his samples. were: "I shadow nothing," and I was wondering if every member caught on to that sentence. Now, as I want to show you what I thought Mr. Coles meant by saying "I shadow nothing," and at the same time showing you some of my racks and

what I use them for, you can draw your own conclusions as to which are shadow racks or free racks, but before doing so, I wish all appologies to Mr. Coles for taking this up. Demonstrations are as good as the pictures in a story book.

We must strive at all times to get an equal distribution of current density and in order to do so we must make racks accordingly.

It stands to reason if we make racks that shadow the work we will not get an equal distribution of current density.

No doubt we all know how to prevent shadowing, but if we have to produce a certain amount of work per day in order to compete with the market, it will be very difficult to make racks without a slight shadowing. We plate some articles that shadow themselves even without being on a rack. You have to be careful how you hang these articles into the tank. Sometimes they have jutting out parts that may hang so near the annodes that they receive an excessive current density that you cannot very well avoid unless you change their position in the tank.

And by doing so you will get a more equal distribution of current on the parts that have been receiving the least.

In making racks we must study the articles first, as one rack will not suit all articles.

I believe in plating with racks rather than hooks. A rack having more than one article on it will be heavier and keep its electrical connection on the cathode rod better than a single hook. Of course, this does not apply in every plating room. Some plating rooms are on the ground floor and are not subject to vibration, such as plating tanks situated on the second or third floor of a building. Then again it depends on the weight of the articles.

Of course, the whole thing rests with the plater, whether we use hooks or racks. Some platers are careless. They fill the tank with work and then set the clock, but we have more to do than that. We expect the work to look different when we take it out of the tank than before we put it in, and we should be sure that we have good contact. Let us always remember that our employers know that we belong to the A. E. S. and expect nothing but good work whatever we use.

METAL COLORING AND FINISHING

By Mr. John Lougheed, Toronto, Canada

This is a very extensive subject, therefore I may state that I will confine my paper to about twenty finishes. As a matter of convenience I have a sample board placed in our showroom and duplicates in the finishing department. When an order is received the number of the finish is marked on the order and it is a simple thing to reproduce the desired finish.

Cleanliness being a very essential factor in electroplating, is also even more important in the coloring of metals. Chemically pure materials, clean, running water, both hot and cold, clean sawdust are all essential to success. A well-ventilated room, free from acid vapors and steam, which contaminate the air and prove injurious to the finishes of a delicate nature, is a big factor, and finally a proper source of good light.

Brush Brass—Buff, brush on Tampico wheel, using brush brass composition, wash in gasoline or mild cleaner, dry and lacquer. For lighter shade and also for relieving, use pulverized pumice or Albany sand instead of the brush brass composition.

Brush Brass and Black—Plate in black nickel solution and relieve as mentioned under Brush Brass.

Black and Yellow Bronze—Black nickel plate, relieve the high spots, dip in solution of copper nitrate, 1 oz.; copper acetate, 1 oz.; sal ammoniac, 1 teaspoonful; water, 1 to 2 gallons, according to shade desired.

Butler's Silver—Silver plate and brush with fine pumice stone and Albany sand mixed in water.

Silver and Black—Silver plate and dip in a solution of pottasium sulphide, relieve high spots with pumice stone and Albany sand equal parts.

Flemish Blass—Buff, clean and plate in black nickel solution, remove from black nickel solution as soon as black color is apparent, as a very light deposit is most desirable. Then shade work on a wire wheel, several shades may be obtained by experienced operator.

Natural Bronze—Clean and pass through a solution of pottassium sulphide, 2 oz.; water, 1 gallon; dip in hot water, scratch brush dry and repeat the operation.

French Grey on Silver—Silver plate, scratch brush, pass through solution given under Natural Bronze and relieve.

Oxidized Copper—Copper plate, scratch brush, pass through the potassium sulphide solution, dry in hot water, scratch brush dry and relieve. Although called an oxide this finish is in reality a sulphide.

Brush Copper—Copper plate, brush on wire wheel, using a mixture of 2 parts Albany sand and 1 part tripple X pumice, with either water or coal oil. If oil is used, clean work in gasoline, after which rinse and pass through a cyanide dip, or dilute muriatic acid, then dry by using hot water and clean sawdust.

Brown and Gold on Brass—Clean the article, dip several times in the potassium sulphide solution, then dip directly into a solution of muriatic acid a few times. If color is too light, repeat the operations. When desired color is obtained, dry brush and relieve the high lights, then pass through a sulphide solution diluted to one-half the strength given above. This gives a brown on the groundwork and a gold tint on the high lights. Dry off in hot water, which should not be too hot, neither should the article be held in the water too long.

Rich Gilt on Brass—Pass through bright acid dip, buff and wash out, and color on rouge buff and lacquer with rich gilt lacquer.

Colonial Brass—Bright acid dip, buff and wash out, give work light coloring on buff, again wash out and wire wheel work wet.

Blue and Gold—Buff, pass through cleaner, dip in a boiling solution of lead acetate, 3 ozs.; hypo of soda, 4 ozs.; water, 1 gallon. Relieve the high lights, sponge off and dip in a potassium sulphide solution, rinse and dry. This gives a gold color on high lights with a blue background.

Blue With Brownish Sheen on Brass—Buff and pass through cleaner, rinse off and dip in solution as given under blue and gold finish.

Bronze on Brass—Buff, pass through cleaner, give a brush brass finish, dip in a solution of antimony sulphide, 1½oz.; caustic soda, 6 ozs.; water, 1 gallon. Use solution hot, after coloring, rinse and dry and run over scratch brush.

Bronze on Copper—Prepare work as for bronze on brass, then dip articles in same solution and scratch brush wet, dip articles second time, rinse, dry off and brush dry.

Ormolu Gold—The matte dip used is run hot. Nitric acid, 1 part; sulphuric acid, 1 part. Zinc carbonate is added to this gradually until the proper matte effect is obtained. After matte dipping pass through a bright dip, rinse and dip in a solution of potassium sulphide, 2 ozs.; water, 1 gallon (used cold), rinse off and lacquer.

Cloister Finish—Copper plate, dip in a solution of antimony sulphide, 1½ oz.; caustic soda, 6 ozs.; water, 1 gal., used hot.

Satin Gold Finish—Dip articles in a solution of 1 part nitric acid, 2 parts sulphuric acid and zinc carbonate. To rinse this dip, first saturate the sulphuric acid with zinc carbonate, then add the nitric acid. After passing the articles through the dip, rinse in clean, running water and dip in the antimony sulphide solution, as mentioned under Cloister Fnish, then rinse, dry and use clear lacquer.

Verde Green—Chloride of zinc, 1 oz.; copper sulphate, ½ oz.; sal ammoniac, 1 oz.; glycerine, ¼ to ½ teaspoonful; water, 1 quart. Copper plate the articles and blacken with potass sulp dip, then stipple with the verde solution as given.

Brown on Copper—Copper plate, pass through a solution of barium sulphide, ½ oz.; water, 1 gallon; run hot, after first dip brush wet; repeat the dip, dry off and brush dry.

Flemish Brass and Gold—Black nickel plate, relieve the high spots, dip in antimony sulphide solution, rinse and dry and use clear lacquer.

Shaded Brass Finish—Black nickel plate, shade on wire wheel, using water only.

Bronze on Copper (No. 2)—Copper plate, rinse and dip in a solution of potassium sulphide, 1 oz.; water, 2 gallons; scratch brush wet, dip articles second time, rinse and dry and scratch brush dry.

Silver Smutt—Silver plate, black nickel plate and relieve as indicated by article being finished.

In conclusion, I may say these finishes are particularly adaptable to electric fixture work and a large number of

shades and finishes can be produced from the few dips and methods I have mentioned. Experience and taste in relieving and shading are important; also the preparation of the articles before coloring shows results after the operations are performed. Articles which are sand-blasted finish to good advantage.

A FEW REMARKS ABOUT PICKLING

By James Welsby, Stratford, Ontario

Pickling as we know it is a process of treating metals with acids for the purpose of removing scale, sand, etc. In pickling metals there are three important factors to be considered, viz.: Temperature of pickling solution, the nature of the scale to be removed and the class of metal to be pickled. If the average operator is asked the strength of his pickling solution he will probably reply as I used to do: "Oh, about 6 per cent. or 10 per cent.," when, as a matter of fact, I did not know, and I believe there are but few men operating pickling solutions who do know the strength of their pickling solutions. Consequently there is a loss of acid in almost every plant where pickling is done on a large scale by dumping the solution down the sewer simply because its action is slow. Another common cause of waste is the use of excessively strong pickling solution. When cast iron is pickled in sulphuric acid, copperas or sulphate of iron is formed through the solvent action of the acid on the iron and after prolonged use the accumulation becomes so great that it greatly retards the action of the solution. If a muriatic acid solution is used on cast iron the acid unites with the iron to form ferrous chloride, just as copperas is formed in the sulphuric acid solution. Hydrofluoric attacks the sand and does not attack the iron. After trying the three acids heretofore mentioned, I now use a 10-per-cent. muriatic acid pickle, while the head enameller in our plant favors a 10-per-cent. hot sulphuric acid pickling solution. It is practically impossible to lay down set rules to be followed in every case. Each operator should study his conditions and select the best methods for his individual requirements. Efficiency can only be attained when the actual strength of the pickling bath is known. The hydrometer is of no use, as it does not give proper in-

dication after pickling has been done. The iron dissolved in the solution affects the reading. The operator is responsible for keeping up the production and keeping down the consumption of acids and turn out a satisfactory job. How is he to accomplish this if he does not know the strength of his pickling bath? This is a problem and a serious one, I think. It has never been given very much consideration until now, most employers judging the ability of the operator and his work for what he could see, and as long as too much acid was not thrown down the sewer the Big Boss kept away from the pickling room and left the pickler entirely alone in his fuming glory. In the use of neutralizers, always remember that a bath of 0.7 per cent. alkali contains 0.1 lb. of soda ash per gal. of water; also that a lime solution is not advisable when the surface of the metal is required to be chemically clean, as in the case of enameling or japanning. On other metals than iron or steel the following acids and alkalis have effect:

For Sheet Zinc—Concentrated sulphuric, nitric and muriatic acids or dilute solutions of same acids; sodium cyanide and caustic soda—all the above act either cold or hot.

For Lead—Concentrated sulphuric, cold; concentrated muriatic hot, and dilute nitric cold or dilute muriatic hot. Caustic soda attacks lead slightly. Hydrofluoric acid has no effect on lead.

I have quite recently stripped tin from copper tubing by using a solution of the following proportions, cold:

Hydrofluoric acid	1 pint
Water	2 gallons

The action is slow but sure, and it does a better job than hot caustic soda solution.

I have also done some nickel stripping from steel stampings and as the method I used may be of interest to some of our members I will describe it: When I took over my present position some three years ago I was confronted by an enormous amount of spoiled work which had been left behind by my predecessors. It was regarded as scrap by the company, but I reclaimed in about nine months over 14,000 pieces of defective nickel-plated steel, all being placed in stock in good condition. The steel pieces were

rejected because of peeling or pitted nickel deposits. After trying several so-called nickel strip solutions with varying results I began using the following method:

I obtained two 10-gallon stoneware crocks and two stoneware dipping baskets. In each of the crocks I made a solution of sulphuric acid, 4 gallons, and nitric acid, 4 gallons. When the solution became cold I placed a basketful of the nickled steel in each crock and left it in the acid all day. (Previous to loading I cleaned the pieces to be stripped by tumbling in clean sawdust.) At the end of the day I removed the pieces from the acid and washed them in cold water, then I dumped them into a neutralizing bath and left them over night. I then dried off the baskets and filled them again and placed them in the acid mixture and left them over night. I find that as long as no water gets into the acids they work good until they are played out. With the exception of a slight darkening of the steel the steel is not affected by the action of the acids. Some may think the above method too slow, but I have proved beyond the shadow of a doubt that it is sure, and providing no moisture is introduced into the acid mixture and the parts to be stripped are clean and dry, they may be left for longer period of time without danger of injury to the steel. The action of the acids forms a metallic salt of nickel, which, I think, must protect the steel from the action of the acid.

I may say that I have found that by heating the hydrofluoric acid solution mentioned above for stripping tin from copper, it dissolves the tin much more rapidly. I heat it to about 130 degrees Fahr.

BRANCH NEWS

Philadelphia Branch

Philadelphia Branch held its regular monthly meeting on February 6 with President Gehling in the chair, and a large delegation of members present. Our instructor, Mr. J. Kennith Graham, gave as his lecture and instructions this month, "The Metal Content of a Nickel Solution," demonstrating the method of arriving at the correct factor with the sodium cyanide and nitrate of silver. Knowing this factor we were able to manipulate the burette in determining the metalic contents of a nickel bath. This part of the subject became so interesting that it was decided that the members bring to the next meeting in March a sample

of their solution so as to make comparisons as to the amount of metal carried in their solutions for their particular class of work, and the same will be a beginning towards a standardization of the amount of metal best required for their particular line of work.

It is very encouraging to the instructor to see the interest shown by the members in these lectures and also the benefit the members are deriving from the same.

The Sustaining Membership Committee reported working on suggestions offered by the members and by our member of the Research Committee.

On account of the illness of Trustee W. Bell, Mr. S. T. Lumbeck was appointed to fill the office until the return of Mr. Bell.

Two applications for membership were received.

The finances of the branch were read and are in good, healthy condition. The meeting then adjourned, it being 10 o'clock, to meet on Friday, March 6, at the Harrison Laboratory, U. of P., 34th and Spruce streets, Philadelphia.

New York Branch

President Fisher presided at the January meeting of New York Branch of the A. E. S. Mr. Richard M. Quinn was elected to active membership. Mr. Harvey Miller read a paper entitled "Successful Methods of Electroplating Antimonial Lead," including some phases of chemical analysis. The paper proved exceedingly interesting. Mr. John Burke spoke of his experiences., "Electroplating and Finishing Aluminum Die Castings." With regret New York Branch announces the death of Mr. John Painter, chartered member, and a zealous worker. A resolution was adopted by New York Branch eulogizing Mr. Painter and his services to the A. E. S.

Boston Branch

Boston Branch met Friday, the 6th, at the American House with President White in the chair.

After the regular order of business the election of a librarian was held and Bart F. Lee was elected. He has started right in to do something for the good of the branch, and says that he will have a subject for every meeting. His subject for the next meeting will be "The Nickel Solution."

Mr. Francis Mackie has been made an honorary member of this branch.

Three members were suspended since the last meeting.

So many members have been falling back in their dues of late that the secretary has been instructed to enforce the three months' rule, whereby, if a member fails to pays his dues, he shall be suspended.

Different discussions took place, after which the branch adjourned at 10:15 p. m.

Pittsburgh Branch

Pittsburgh Branch has voted in favor of a dinner party to be held at the U. S. Bureau of Mines the evening of April 16, 1925. In addition to the dinner there will be an entertainment for our members and their friends. Every member is looking forward to this important date. Those that attended our meeting of last Saturday are all working hard to make this event one of the best that Pittsburgh Branch has ever pulled off, and the best of it is that the branch will play the part of host, so that it will not be possible for any member sending in an excuse that this or that is going to keep him away.

Our meetings are very well attended and we have some lively discussions, and those that remain at home on meeting nights are missing some very important things relating to their work.

Mr. W. S. McKeon, Chairman of Entertainment Committee, will advise you more fully in reference to our party later.

Grand Rapids Branch

Grand Rapids Branch of the American Electroplaters' Society held its regular meeting February 11, at Vocational High School, with a very good attendance. G. R. B. will have a smoker on their next meeting in March.

We had a very lengthy discussion on the value of having good castings from the foundry. Some of the boys were getting poor castings, and said it was almost impossible to get a good foundered product from them. After discussing a few other minor topics we adjourned.

Chicago Branch

Regular monthly meeting of Chicago Branch, held February 4, 1925, at Atlantic Hotel, 316 S. Clark street. Meeting called to order with President F. J. Hanlon presiding. Reports were heard from the Chairman of Banquet Committee on banquet held January 23, 1925. This was the largest attended banquet Chicago Branch has ever held.

A booster committee was appointed to act for the Montreal convention, meeting was then turned over to librarian, who found the following questions:

Question 1—Members showed sample of work which was copper plated, buffed and then nickel plated. Work was very badly streaked.

Answer 1—Solution low in metal and highly acidy. Member states that the cure was carbonate of nickel.

Question 2—What causes work silver plated and lacquered to turn pink after being in stock for some time?

Answer 2—Consensus of opinion was that there was copper deposited with silver, this causing the pink cast on work.

Question 3—What is the best lubricant oil for polishing purpose?

Answer 3—Animal lard oil was suggested.

Question 4—What kind of finish can be put on 14-gauge steel that will look good and stand 900 degrees Fahrenheit heat?

Answer 4—Royal copper finish.

Toronto Branch

January 26 in Toronto terminated very cold and blustry, but, despite the arctic atmosphere a very goodly attendance was in evidence at our meeting.

President J. S. Cairns read an instructive letter from Dr. J. W. White, an eminent skin specialist and traveler. Dr. White says there is no such ailment as nickel itch. It is nickel eczema. Various trades have similar skin troubles. Even bookkeepers have a rash known as bookkeeper's eczema. Fair skin is thin skin and usually dry. Dark skin is thick skin and usually oily. Both types are more or less affected. The doctor's letter, in abstract form, has been sent to the REVIEW. The discussion following this letter was indeed the best we have had on the subject. Mr. James Welsby of Stratford, Ont., devised a jig for forming holder hooks with perfect two-point contacts. The hook is of symmetrical lines, splendidly proportioned and adds greatly to the efficiency and appearance of a holder. We demonstrated the device and the members pronouncd it a very fine idea.

Mr. Cairns presented samples of pressed steel showing effect of pickling prior to deep drawing operation. Box annealing avoided the trouble, which was cracking or splitting of the steel.

Question—What method can be used to produce a blue-black direct on bright, hard steel?

Answer—Dip dry into melted sodium nitrate if the heat is not great enough to affect temper required in the steel, or use hypo of soda, 8 ozs., and lead acetate, 8 ozs. per gal. of water, or 1 lb. white arsenic, 2 to 4 czs. of ferrous oxide dissolved in 1 gal. muriatic acid. This solution to be kept free from water. Dip the steel perfectly dry. The Parker process, using phosphoric acid, manganese dioxide and ferrous oxide, was suggested. We will appreciate any information from members upon this subject. Would also like to hear from any members who have experienced any abnormal condition in nickel solution equipped with anodes made from one-third scrap anodes and two-thirds shot nickel.

Indianapolis Branch

Indianapolis Branch held a special meeting February 14 and decided to go back to the monthly meetings again, as the quarterly meetings adopted in June, 1924, did not prove successful. Our meetings will be held as they were previously—the 2nd Saturday in month, at Hotel Denison.

One member took a new job recently and experienced a great deal of trouble with peeled and pitted work, and after having gotten rid of the peeling and nearly all of the pitting there was one particular class of work which still pitted. It was the consensus of opinion that the current density was too strong, as the work, being square frames, was run with the same current that other work was that took up more work surface.

Bridgeport Branch

The Bridgeport Branch held the regular February meeting on the 6th, President William Flaherty presiding, with an attendance of twenty-five members.

The sick committee reported that there was no sickness among the members so far as they knew.

The chemical class reported very favorable results. The new chemicals have arrived and the class is going full sway every Friday night.

Due to the fact that most of the members intend to take in the New York banquet Saturday, February 21, the open meeting, which falls on the 20th, has been postponed.

A motion was made and seconded that the Bridgeport Branch hold a banquet. Accordingly a committee, including Nelson Barnard, chairman; William Stratton, George Karl, John Oberender and Harry Dawson, was appointed. The committee decided to hold the banquet at Hotel Stratfield, Bridgeport, on Saturday, April 18.

St. Louis Branch

On January 31 we held our annual banquet. It was a success in every way. In the afternoon the ladies were taken care of by a committee, of which Mrs. F. Horath was in charge.

The educational session, with G. S. Robins as chairman, was of unusual interest to the platers, as Dr. H. L. Ward of Washington University gave an illustrated talk on "Actions and Effects in Plating Solutions." Those present expressed themselves as indebted to Dr. Ward for his lecture.

One hundred and sixty-five persons sat at banquet tables.

The evening's program consisted of addresses by Supreme President F. J. Hanlon, Supreme Secretary E. J. Musick and Supreme Poet H. J. Richards; also remarks by President F. Menniges, C. H. Proctor, E. Lamoureux and Secretary Myers of Chicago Branch.

G. S. Robins entertained with some clever sketches, and Miss Coyne as soloist was heartily applauded.

Dancing and a good, social time continued until a late hour. E. J. Musick was chairman of this successful affair, so "nuff said."

Our regular February meeting was passed over, it being close to above meeting.

Cleveland Branch

The Cleveland Branch held a smoker and open meeting at the Hotel Winton Saturday, February 7. A. E. Sommerville was the chief story-teller and fun-maker. He also grew serious and gave our visiting fellow-platers a heart-to-heart talk, and handed each an ppliction blnk, which, we hope, will be returned to us. Among our guests was Fred Liscomb of the Chicago Branch, who gave us a great talk on "How to Increase Our Membership." He also told us about his early experiences in Cleveland, as this was Fred's home town. Mr. C. E. Marker was elected to membership and James Purcell was reinstated. The application of Paul

R. Stamm, 947 Elbon road, was received. After all business was taken care of we had a general discussion, and we sure did raise some smoke. It is the hope of the Cleveland Branch that all A. E. S. members will do as Mr. Liscomb does when in or near Cleveland. We assure you a great welcome.

Milwaukee Branch

The Milwaukee Branch met at Lipp's Hall, 321 3rd street, February 12, for the regular monthly business meeting. Attendance was fairly good.

One new member, Mr. H. Peterson, was initiated, and Mr. Han of Racine, Wis., elected to membership.

Quite a bit of interest has been shown by some of our members in the discussion at the monthly educational meetings. If more of the members would attend these meetings; take part in the discussions, giving their experiences in overcoming difficulties, the more we all would profit. Our society is an educational one and only through exchange of ideas and experiences will the society's objective be attained. So Milwaukee members, let's all who possibly can, attend.

At our last educational meeting the use of the double-wedge comparator for determining acidity of nickel solutions, was demonstrated by Mr. Nishwitz. This was very interesting and instructive. Brass plating will be the subject taken up at our next educational meeting.

Waterbury Branch

At a recent meeting of Waterbury Branch, A. E. S., considerable comment of a favorable nature was heard relative to the work of the Detroit Branch Research Committee, as outlined in the January issue of the REVIEW. The idea of collecting data from the members to learn what phases of electroplating, in their opinion, need special investigation, to be of assistance to them, is a most worthy one. It is further intended to pass this data on to the National Research Committee, as well as the Bureau of Standards, for the purpose of throwing some light, as well as to obtain some information on the crying needs of the plating and finishing business. The idea suggests the thought that it might be a popular move on the part of future supreme convention committees to send out questionairres to the various branches for the purpose of obtaining ideas as to the most desirous subjects to be brought up for discussion. One subject that would undoubtedly prove of considerable interest to the members around here, as well as to the membership at large, is the handling of aluminum for plating and other finishes. The use of this metal for some time past has been in great demand for making various articles. To such an extent is this so that at a recent banquet one of our leading manufacturers, among other things, said: "Waterbury has to hold its own with outside competitors, and unless the men work together and maintain business, aluminum or some other metal will be the successor of brass." The greater the demand for aluminum articles means the greater will be the demand for various finishes. We

are told by some that the plating of aluminum is an easy matter. It is realized that this is so, when wired and racked work is considered, but how many members are there that are successfully turning out small aluminum objects in the mechanical plating barrels? It is also considered that it is an easy matter when the aluminum contains a sufficient alloy to make it plate, but how about the pure sheet aluminum, in a plating barrel? The subject of aluminum and its various finishes is one that has been but slightly touched on at the recent conventions, and it is to be hoped that research work will be the means of throwing more light on this subject in the near future.

Newark Branch Question Box

(1) Question—How can a good smut be had on a fair class of gold work? This is to be a rose gold finish.

Answer—Use a solution composed of 10 sheets gold dissolved in cyanide. Use only enough cyanide to dissolve the gold. Then add 3 ozs. yellow prussiate of potash and two sticks of caustic soda. This is for a one-gallon solution. Keep solution good and hot, preferably about 185 degrees F. Caustic soda will tend to give lighter shades and yellow prussiate the darker shades.

(2) Question—What is the best method of filtration for a nickel solution?

Answer—For continuous filtration it was recommended that a rotary pump be used as it keeps the air out of the solution.

(3) Question—What makes a sulphur-cyanide black-nickel solution give a soft deposit?

Answer—An excess of sulpho-cyanide.

(4) Question—How can a good brown smut that can be relieved be obtained on brass?

Answer—A good brown smut on brass can be had by taking one part nickel solution, three parts acid copper solution and a handful of hyposidphite of soda. If work is to be brass plated the work must be plated heavy. (This solution is an immersion solution and must be used boil hot.) While this solution is highly recommended, it does not produce the results wanted, and it will be very much appreciated if answers are sent in from other branches.

Newark Branch Question Box

(1) Question---What causes nickel solutions to plate dark?

Answer—Too much alkaline, copper in solution, zinc in solution, excessively high chlorine content, faulty current connection. One member stated that very often on a cold morning his solution would plate dark. His correction was to warm the solution and add a small amount of sulphuric acid. Another member stated that his solution would some times plate dark without any apparent reason. Analysis would show that acidity, metal content and chloride content was correct and that there were no impurities to cause the trouble. His correction was to place three or four old anodes on the cathode rod and run the solution full tilt for three or four hours.

(2) Question—What is the effect of hydrogen peroxide in a nickel solution?

Answer—One member stated that he adds about three ounces hydrogen peroxide, 3 per cent. solution (the kind purchased at the drug store) every week. It has almost entirely eliminated his pitting troubles. As this member has charge of the plating department of one of the largest plants in the east, his recommendation is worth serious consideration. As to the chemical action it was suggested that as hydrogen peroxide was a very unstable compound, it would break down into water and oxygen and the liberated oxygen would combine with the free hydrogen to form water. As hydrogen is generally conceded to cause pitting the use of hydrogen peroxide would eliminate the free hydrogen and also the pitting. Whatever the chemical action is the use of hydrogen peroxide was highly recommended as a stop to pitting.

(3) Question—What is a method of producing a matt surface on steel by use of an acid dip?

Answer—One member suggested the use of a saturated solution of iron chloride. This solution works rather slow, but is very effective. Another suggestion was to use a dip compound of one part water, one part sulphuric acid and one part nitric acid, with the addition of seven ounces zinc oxide.

(4) Question—What is the cause of a nickel deposit peeling when all cleaning operations have apparently been perfect?

Answer—The answer given to this question was that the solution was either too acid or too alkaline. Also avoid using any aluminum compound.

(5) Question—How can gold precipitated as the fulminate be made to settle and washed quickly?

Answer—To dilute the gold chloride and also the aqua ammonia.

(6) What is a good corrosion test for nickel on steel?

Answer—To place the article in distilled water. poor and porous coat will rust in one hour, while it will take over night for a fairly good coat to rust. A rather crude but quick and effective test for the thickness of a nickel deposit was suggested by one of the members. This was to make a solution of nitric acid, sulphuric acid and water, equal parts by volume. Place a drop of this upon a test piece and note the time taken to eat off the nickel deposit. Test with the test piece, clean and dry and have the testing solution about the same temperaure all the time. The temperature of the testing solution is very important, as a warm solution will work faster than a cool one.

ELECTED TO HONORARY MEMBERSHIP

Boston Branch

Mr. F. Mackie .....Everett Farms, Billerica, Mass.

ELECTED TO MEMBERSHIP

Toronto Branch

Russell Giles .....North Sidney, Box 551, Nova Scotia, Can.

New York Branch

Richard M. Quinn .....244 Reid Avenue, Brooklyn, N. Y.
Hermann Ruhlmann .....219 Elbertson St., Elmhurst, L. I., N. Y.
John Halas .....77 South 5th St., Brooklyn, N. Y.
John C. Boyer .....422 Hudson St., New York, N. Y.

Cincinnati Branch

Alfred D. Lay .....503 S. Chestnut St., Marysville, Ohio

Grand Rapids

Clarence Stimson .....1396 Columbus St., Grand Haven, Mich.

Cleveland Branch

Chas. E. Marker, Active.....1177 Cook Ave., Lakewood, Ohio

Milwaukee Branch

Fred W. Hau, Active..c|o Racine Polishing and Plating Co., Racine, Wis.

Chicago Branch

Jacob C. Hergenhahn, Associate.....212 W. Kinzie St., Chicago, Ill.
George Morris, Associate.....2308 First St., Peru, Ill.

APPLICATIONS FOR MEMBERSHIP

Pittsburgh Branch

Walter L. Hague

Detroit Branch

H. G. McIntosh.....Chemical Engineer Reo Motor Car Co.

Philadelphia Branch

Elijah Reid, Active.....120 Utica Ave., Westmont, N. J.
George F. Hasslacher, Associate.....860 Drexel Bldg., Philadelphia, Pa.

Cleveland Branch

J. B. Heargist .....12540 Forest Hill Ave., Cleveland, O.
Paul R. Stamm .....947 Elbon Rd., Cleveland, O.

Chicago Branch

Joseph John Zyks, Active .....4041 Grace St., Chicago
Joseph A. Hall, Active .....227 N. 2nd St., Elkhart, Ind.
John Feeney, Active .....1746 N. Kedzie Ave., Chicago
Frank Rankin Porter, Associate .....
Edison Appliance Co., 5660 W. Taylor St., Chicago, Ill.
Geo. O. Kistler .....1414 Johnson St., Elkhart, Ind.

Cincinnati Branch

Joseph J. Tressel, Active .....211 Edwards Bldg., Cincinnati, O.

SUSPENDED

Chicago Branch

Joseph P. Miller .....2451 Montrose Ave., Chicago, Ill.
Albert Kappeler .....2615 W. Madison St., Peoria, Ill.
Clyde Winn .....1715 South Spring St., Springfield, Ill.
Otto Fiss .....630 45th St., Rock Island, Ill.
Robert Wilson .....444 W. 57th Place, Chicago, Ill.
J. H. Hansjosten .....1803 Beaufait Ave., Detroit, Mich.